DOCUMENT RESUME

ED 452 356 CE 081 614

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TITLE	Learning without Walls: A State of Learning. Fusion 2000 Global Learning Summit (Glasgow, Scotland, September 29, 2000).
INSTITUTION	South Australia Dept. of Education, Training, and Employment, Adelaide.
PUB DATE	2000-09-29
NOTE	20p.; Address by the Honorable Malcolm Buckby, Minister for Education and Children's Services, South Australia.
AVAILABLE FROM	For full text: http://www.learningstate.sa.edu.au/minedu/files/full_presentation_text.pdf.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Access to Education; Computer Mediated Communication; Computer Uses in Education; Curriculum Development; Delivery Systems; Developed Nations; *Distance Education; *Educational Development; *Educational Improvement; Foreign Countries; Geographic Isolation; *Information Technology; Internet; Lifelong Learning; Nontraditional Education; Open Universities; Postsecondary Education; Professional Development; Secondary Education; Teacher Improvement; *Telecommunications
IDENTIFIERS	*Australia (South Australia); Online Courses

ABSTRACT

Information and communication technology (ICT) is an integral part of the South Australian Department of Education and Children's Services strategy to improve education and training. A major focus involves online delivery and distance education through the Internet and teacher inservice and professional development. This redresses such problems in education delivery as staffing in rural areas, curriculum choice, isolation, and small numbers of students at various sites. One of the most direct and effective ways to deal with distance is the Open Access College. Sites making innovative uses of ICT include Coober Pedy Area School, Willunga High School, and Nuriootpa High School. Government policies and directions include the development of a school Internet infrastructure and telecommunications initiative and establishment of the Australian Science and Mathematics School. To support ICT strategies, the DECStech Learning Technologies Project has established six Global Discovery Schools. South Australia is managing a major national online curriculum initiative, including Southern Australian TAFE (Technical and Further Education) Online and the University of South Australia's in-house universal online learning environment. Mawson Lakes, a brand new estate, is being created as a learning community from the ground up. Its two unique characteristics are connection of every home, workplace, and institution with wide-band optic fiber cabling and educational services provided within the context of lifelong learning. (YLB)

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Fusion 2000 Global Learning Summit, Glasgow

Learning Without Walls

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A State of Learning

Address by the Honorable Malcolm Buckby, Minister for Education and Children's Services, South Australia, 29 September

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Chapter 1: Introduction

Australia, or as the ancient sailors used to call it "*Terra incognita*". In more recent times it has been known abroad, especially in the UK and the US as "Down Under". These days, a more popular nickname is simply "Oz", which suits us, being as it were, "Aussies".

Whatever the term, it is a very large island, the largest in the world, on some of the oldest earth on Earth. It is so big that the UK would fit into it 38 times.

South Australia, my State, is at the bottom of the country, spanning across the centre.

It, too, is big, about four times the size of the UK.

South Australia is a place of wide-open spaces. Its only real walls are the mythological Outback, the great southern seas, the mighty old Murray River, and the abundant food and wine areas to the south and east.

The culture of South Australia has been built -- as distinct from the other States founded as penal colonies -- on the principles of liberalism and fair trade and our separation, by distance, has kept these values intact.

The capital, Adelaide, is, like Glasgow, a learning city, as the centre of a learning state. The renowned physicist Paul Davies, who has come from the U.K. to live and work there, describes it as "the great sabbatical city."

We have a multicultural population which is small, especially in relation to our size, of less than one and a half million, most of whom live in Adelaide. The Australian Nobel Prize winning author, the late Patrick White, known for his temperament as well as his talent, once considered moving from Sydney to live in Adelaide. He changed his mind when he decided not enough people were there for him to argue with.

As *The New Yorker* describes it: "Adelaide is possibly the last well-planned and contented metropolis on earth."

South Australia has brought together its education and children's services (pre school and childcare) -- within the one Department and is presently developing a birth-to-18 curriculum framework.

For the record: it has 621 public (government) schools, 415 preschools, 36 play centres, 220 child care centres, and 300plus outside school hours care services. There are three universities, and eight Technical and Further Education (TAFE) Institutes on 50 campuses. There are 182,000 school children, and more than 80,000 children attending children's services, 12,800 school teachers, 800 preschool teachers, 92,000 TAFE students and 1600 TAFE lecturers. Some schools in the more remote parts of the State have as few as 15 students.

The combination of large size and small population presents an acute challenge to imagination, effort and the right use of resources to ensure that all our children, everywhere, can have access to education at the highest standard.

We deal with this 'tyranny of distance' and the need to build the State as a knowledge economy to keep us part of the global landscape by using the latest in technology.

Our relative isolation makes us work together despite the great distances. It has made us enterprising, especially in the field of ICT, creating an electronic intimacy across the long miles.

South Australia's highly innovative educational ICT program often leads the national agenda. *The National Goals for Schooling in the Twenty-First Century*, known as *The Adelaide Declaration*, agreed in April 1999 by all State, Territory and Commonwealth Ministers of Education, included the commitment that *all students will leave school as competent, creative and productive users of new technologies including information and communication technologies and understand the impact of those technologies on society.*

ICT is an integral part of my Department's strategy to improve education and training as a key industry in South Australia's information economy, as a producer, consumer and export earner.

It seeks to fulfill our Charter, which says: "All young people in South Australia have the right to gain through the public school system a broad and balanced education and prepare them for effective participation in society."

Chapter 2: Going the Distance

A major focus of my Department involves online delivery and distance education, through use of the Internet, and teacher inservice and professional development. This is to redress such problems in education delivery as staffing in rural areas, curriculum choice, isolation and small numbers of students at various sites.

Some children live on remote homesteads perhaps 400 kms from the nearest town. Some are 1000 kms from the nearest school. Even some of our major Area (Regional) Schools are 800 kms from Adelaide.

Open Access

One of the most direct and effective ways in which we deal with distance is through the Open Access College, which had some of its origins in what was called the Correspondence School, which began back in 1920.

The Open Access College is located on two campuses, 300 kms apart, and delivers to 2250 students both across and outside the state.

The main campus is in Adelaide, while the School of the Air campus is north at Port Augusta.

The students taught from Adelaide receive weekly teleconference lessons, while the School of the Air students have daily contact with their teachers via HF radio.

Although there has been a decline in our rural population, through the expanded use of ICT we have been able to bring greater choice and quality of curriculum to our country children.

Isolation should not be a barrier to excellence in education.

Virtual classrooms link six or eight students by video conferencing across a number of places, and specialist teachers provide the curriculum knowledge and support across both primary and secondary courses. While satellite and advanced computer systems continue to be developed, the telephone and even the old mail system still have their place, as does the fax machine. We also have video conferencing to students.

We find distance education can lead to better retention rates as well as more independent learning, with success in gaining entrance to tertiary studies equal to or even higher than the more traditional forms of education, with several receiving the highest score possible.

And it has also encouraged significant adult re-entry from parents and other adults assisting children on their studies.

Sixty per cent of the Open Access students are located in country South Australia, although more metropolitan schools are also taking advantage of its expanded curriculum offerings.

A new Open Access College initiative aimed at adapting distance education material and methodologies for delivery in mainstream metropolitan schools is an Indonesian CD-ROM. This operates as an interactive storybook to teach the Indonesian language and culture and computer literacy. It is currently on trial at the Mawson Lakes Primary School, in Adelaide, our most advanced ICT education site.

Another example of innovative South Australian online learning is an Online Photography course, also being developed by the Open Access College. This module is being delivered directly into students' homes and classrooms, making use of web technologies and delivered via the Internet.

Distance education is also reaching out to Indigenous students, the Anangu, or traditionally oriented desert people living in the Lands, in the north west of the State.

As the Anangu say, they want their children to learn 'waipala' (whitefella) secrets in their schools so that they can gain all the skills, knowledge and understandings needed to take positions of power within and on behalf of their own communities.

A number of the communities in the Lands have schools, which are several hundred kilometres apart. These are being linked by fibre optic, which is giving them fast connection to the Internet and the Anangu Schools Wide Area Network (WAN), which will span 1600 kms.

Anangu Education Services are developing CD ROM courses for secondary students in seven areas of learning, including English as the second language.

Early in 1999, permission was given for Australia's largest national telecommunications carrier, Telstra, to install optic fibre through an important Aboriginal Dreaming trail across a mountain range on the Lands.

Pipalyatjara Anangu School is one of the most remote in Australia. The nearest large centre is Alice Springs, 750 kms away by road, half of it a dirt track. The first telephone in Pipalyatjara was installed in the late 1970's, and now optic fibre is in place there, though a recent mouse plague has been causing a few problems.

Coober Pedy

A story to illustrate how solitude can lead to self reliance involves two enterprising Outback students in South Australia who became joint winners in the 1999 Australian Schools Web Challenge.

Their web page design was for the local festival at the legendary South Australian frontier town of Coober Pedy, which is one of the most isolated areas in the State. The town is known for its opal mining and the singular way so many residents live below ground to escape the intense summer heat of 40 plus degrees Celsius.

The two youngsters faced many obstacles not experienced by students learning face to face.

They are cousins from far north cattle stations, Katrina Williams, a Year 7 student with the Open Access College in Adelaide, and Sam Williams, a Year 6 student with the Port Augusta School of the Air.

They worked together to produce the winning entry for the primary school section of the competition, which included students from both public and private schools across Australia.

What made their achievement all the more remarkable was the fact that they live more than 200 kms from each other and had to communicate between themselves and their teachers by telephone conference links, fax, email and NetMeeting, a new Open Access College system.

Approximately 30 per cent of the 450 students at the Coober Pedy Area School are Aboriginal, 22 per cent Anglo-Australian, 15 per cent former Yugoslavian, 16 per

cent Greek-Australian, while the remaining 17 per cent are comprised of 35 different nationalities.

As an example of its ICT versatility, the school uses video conferences for lessons in a Greek bilingual language program, with the teacher, in Adelaide, delivering five lessons per week, using the South Australian curriculum as the topics, but Greek language for instruction. Currently, students are learning about Aboriginal culture as part of their Studies of Society and Environment.

In another story, four students at the Coober Pedy Area School were involved in setting up an Internet service for the local community, in a joint venture by the District Council and OzEmail, the service provider. Because OzEmail had no staff in Coober Pedy, the students themselves trained to be Net helpers, showing people how to install the software and use the Internet. They were paid a small fee for each connection they helped to achieve.

One of the students, Zafiris Korbetis, is now studying multimedia in Adelaide, and helping the Women's and Children's Hospital with its website. The hospital had provided the school with an online facility on mental health issues. Zafiris has been involved in a major project at the hospital aimed at preventing youth suicide, especially in remote areas.

His success is a good example of South Australia's new Vocational Education and Training (VET) strategy, how it works with ICT and how it is assisting young people to make the transition from school to the workplace.

Our intention is to mainstream Vocational Education as an integral part of our curriculum, preparing students for the world of work through workplace experience and enterprise education.

Vocational Education is now a key feature of our secondary schools, with more than 50 per cent of post compulsory students engaged in VET courses.

Willunga High School

A registered Vocational Education training organisation, which is making innovative use of ICT in the online delivery of its VET curriculum, is Willunga High School, on the Fleurieu Peninsula south of Adelaide, with 900 students.

Students there employ AUSVIT software to measure humidity and monitor diseases in the school vineyards and olive groves, generally using laptops to gather data and then analyse it back in their classroom.

The school is now testing a range of software on behalf of local industry.

It also supports students including adults, online, at such distant places as Kangaroo Island, to complete Certificate 1, Food Processing (wine) using flexible delivery.

The school received funding in 1999 to build a small winery, cellar door sales facility, commercial kitchen and function centre and state-of-the-art IT suite with full video conferencing facilities. This is planned to be completed by Christmas. The school is also producing its own extra virgin olive oil.

The site will support ongoing training for school students and the adult community, for whom the school already provides training, including a class for unemployed people.

Nuriootpa High School

A close connection between school life and local industry is being established in the famous wine producing area of the Barossa Valley, at the Nuriootpa High School, which is engaged in vine growing and viticulture.

Nuriootpa High has its own winery. It has won awards for its wines and markets them on the Web nationally and overseas.

Several of its final year students have planned to go on to study viticulture, or related courses at university.

Among 20 plus agricultural enterprises, Nuriootpa High School students grow a wide range of vegetables and tend farm animals.

The school also supports some of its students doing the South Australian Thoroughbred Racing Authority's website course for Racing VET in Schools to prepare them for possible careers in the industry, which is one of Australia's largest and most diverse employers.

The course is part of a project between my Department and the Racing Industry Development Authority of South Australia. It covers the three main codes of racing, thoroughbreds, trotting and greyhounds, and is available on the Web to students throughout Australia.

In a complete act of grace, the school has been able to build a close association with the nearby Lindsay Park Racing Stables, established by the late Colin Hayes, one of the kings of the Australian turf, who trained three Melbourne Cup winners.

As well as giving them first-hand experience, the work also counts towards a nationally accredited VET credential.

The Lindsay Park stables leased a bay filly, *Barossa Class*, in partnership with the school syndicate, making it the first high school racehorse in Australia. She is now in foal to Jeune, a Melbourne Cup winner. *Barossa Scholar*, the school's latest racehorse, is currently in training. All prize money will be used to create a resource kit about the racing industry for schools across the State.

They might be too young to drink alcohol, and too young to place a bet, but the students at 'Nuri', as we know it, are learning plenty about alternative pathways from school to employment.

Wherever they are located, whether thousands of kilometres away in the Outback, or in the middle of Metropolitan Adelaide, my Department is working very hard to ensure that all South Australian students receive their rightful inheritance of the latest in Information and Communication Technology to enhance their curriculum choices, the way they learn, how to prepare themselves for the increasingly complex and challenging world of work, and to take their place as global citizens.

Chapter Three: Government Policies and Directions with ICT

The South Australian Government is committed to advancing education and development in our State.

A number of priority areas are identified in the *Statement of Economic Directions* (December 1999), not the least of which is the desire by the Government that all South Australians will have better access to education and learning. This will be facilitated *through the use of advanced IT and telecommunications infrastructure, development of on-line content and services and competent educators and trainers employing modern learning methodologies.*

In keeping with this priority and in recognition that education is indispensable to building economic success, the South Australian Premier, John Olsen, made a commitment that all State metropolitan and country education sites would be able to access high speed, low cost Internet services for the price of a local call.

To this end, my Department in partnership with Telstra, and SchoolsNet, a provider of Internet based products, has rolled out *sa.edu*, a school Internet infrastructure and telecommunications initiative.

Through *sa.edu*, all South Australian schools are now connected to and accessing low cost Internet services, building a consistent platform that connects the schools across the State. Every student has their own personal portal and email address. Value-added Internet services available through *sa.edu* to South Australian students and teachers such as filtering, e-mail, notice boards and portals are being used to improve communication and educational services within school communities.

As well, more than 4000 post compulsory students are enrolled in over 200 on-line TAFE modules.

IT Smart -- using information technology to improve learning and training outcomes, enhance industry capability and increase efficiency and effectiveness -- is the third objective in the Strategic Plan 1998-2001 of my Department, with DECS*tech* as a key strategy.

The $85.6 million DECS*tech* 2001 Project has aimed at ensuring that by the year 2001 technology *... is able to be an embedded, integrated part of learning activities, and technological applications will be, at all levels, curriculum driven.*

Through the implementation of DECS*tech*, the State Government has developed one of the most extensive information and learning technology initiatives for schools in Australia.

The focus for technology in schools will be on continuing to develop high quality teaching and learning practices.

Emphasis on this focus will have a significant impact on students' ability to harness technology -- a vital requisite for full participation as active citizens of the future.

The main attention of DECS*tech* is on the role of technology in effecting improved and different student learning outcomes. This objective is being achieved through curriculum innovation, professional development programs, Department sponsored high speed, high quality access to the Internet -- all schools are to have at least 128K, but most have 256K as standard -- and a coordinated approach to infrastructure in hardware and local and wide area networks.

Our commitment is also to develop and implement an aligned IT strategy which: - provides stable, reliable, current technology infrastructure; improves the IT skills of all staff; establishes information management systems accessible to all staff; and maximises the use of innovative technology and multimedia access by all sectors of education and training delivery.

The South Australian Government, Telstra, and *sa.edu* are providing what we believe to be the best access in Australia to the Internet.

To implement our ICT policy, our commitment is to have one computer available to every five children.

Under development is the introduction of Learner Achievement Software (Assessment online), which will provide a single, complete and progressive record of a learner's achievement across the schooling years, interfaced with existing and future school administration and timetabling software to enable schools to record and monitor learning programs for specific learners.

Our recent initiatives across ICT means:

* All of our schools are now connected to the Internet using state-of-the-art ISDN and satellite connections, after two years of computer network cabling for schools;

* Internet services such as email, notice boards, filtering and portals are available to all students and teachers. Schools are relieved of a significant administrative burden, and software is in place, which allows them to restrict access to inappropriate sites;

* Home use of the Microsoft desktop software and other software packages for all school staff ;

* Online curriculum delivery and support for ongoing development of digital curriculum resources ; and

* An electronic gateway to education, training and employment information and services being developed, and the Learning Technologies Project exploring and sharing best practice in the use of technologies to transform student learning.

The South Australian Government has recently released the *Information Economy 2002 Vision : Delivering the Future*, which aims to ensure South Australia will be one of the most connected communities in the world.

It is envisaged that through *IE2002*, South Australia will become an information-enabled community and a centre for communities of interest that will connect people around the world to South Australian-oriented online communities and trading centres.

To this end, all South Australians are being encouraged and enabled to participate in the Information Economy, locally, nationally and globally.

My Department is proud to lead key education initiatives that underpin this Vision.

For example, in 2001 all students aged six to 16 years will receive an education in the use of Information Technology and telecommunications, and will leave school with an industry recognised IT qualification.

We are also developing an online career planning and information service, and the establishment of School IT Cadets, where young people are exploring career opportunities through putting their IT skills to work in 'real life' market situations

Australian Science and Mathematics School

Another exciting South Australian education innovation will be the establishment of the Australian Science and Mathematics School as a partnership between my Department and Flinders University, where it will be located.

The school will become a state and national focal point for teaching, teacher training, and research aimed at fostering improvements, innovations and reforms in science and maths in secondary schools, and transforming these subjects as career options.

Its creation recognises that the new sciences and ongoing technological innovation form the basis for significant wealth creation and employment generation in the knowledge-based global economy of the 21st Century.

The South Australian Government has made a firm commitment to develop the world's best practice in science, technology and knowledge-based industries and enterprises such as biotechnology, aquaculture, IT and software engineering, laser science and waste water and land remediation.

South Australia and the rest of the nation are committed to providing high quality teaching to ensure that Australian students are ranked among the top five countries in the world in science and mathematics within five years.

The new school will have up to 450 senior secondary students, including about 150 international students.

Chapter Four : Strategies

The DECS*tech* Learning Technologies Project has established six Global Discovery Schools, working with the Technology School of the Future.

Technology School of the Future

To support our ICT strategies, we have the Technology School of the Future, a staff training and development centre unique in Australia, in fact believed to be the first of its kind in the world.

The School is the largest government provider in Australia of hands-on teacher training in school use of computers.

Its core business is hands-on, context- sensitive staff training; leading edge student programs; test bed classes of students and their teachers to develop new methodologies and research into latest software and hardware.

The student programs are available both during and after school hours. For example; multimedia, including digital video and sound production and control technology.

The facilities also support the integrated use of technology in the classroom to utilise the Internet and communication technologies.

And, it has a focus on strong industry partnerships.

Discovery Schools

The Discovery Schools program, involving nine schools, is a $7.3 million curriculum initiative to maximise the uptake and purposeful inclusion of technologies to transform teaching and learning.

Discovery Schools are the connection between the cutting edge curriculum best practice, and providing professional development programs that enable all South Australian public schools to transform their teaching and learning practices.

Other aspects are showcasing and sharing best practice models about pedagogy, teacher methods and school change. They seek to improve the school principals' expertise as users, curriculum leaders and decision makers about Learning

Technologies. They are also involved in informing Departmental policies and practices.

Our task is to empower all teachers to embrace the use of Learning Technologies and to provide them with the curriculum understanding to apply the tool of learning technologies in all areas and levels of schooling.

Le Fevre High School is situated in an historically working-class western seaside suburb, which now has enormous diversity. Five years ago its student population was 360. Now it is almost twice that.

Its students were the first in Australia to achieve a new international computer industry accreditation, as Microsoft Certified Professionals.

The teaching and learning programs at Le Fevre focus on making a difference for students by providing them with the opportunity to use technology in different ways; to expand thinking and expression; to develop high order thinking and to work collaboratively to achieve an outcome.

One of Le Fevre High School's priorities is the further development of learning technologies through curriculum planning, innovative resourcing and staff professional development. With supportive and proactive school leadership and a desire to see improved student learning outcomes through the embedding of learning technologies in the curriculum, the school has developed a range of programs which include middleschooling, multimedia accreditation and certification.

A student 'Help Desk' has been established at Le Fevre as part of the Year 10 Networking Course. It is designed to prepare students as work ready by providing them with real life experience in trouble shooting, repairing and supporting the infrastructure of the school.

This is an ideal way to have students learn about technology in an actual setting, and they can use this learning as part of the Networking Course, which in turn is part of their South Australian Certificate of Education (SACE) at Year 11 and 12 level. It is a practical and career pathway.

Le Fevre is linked to a Discovery School because its job is to work out the best way of teaching students about technology.

When teachers come to Le Fevre, they learn two things: how to manage technology as part of school life and the best way of improving student's learning about technology and through technology.

Le Fevre students are also producing a digital magazine as part of the Art/Multimedia SACE unit. They use a scanner and digital camera to create an interactive end-of-year yearbook, a virtual scrapbook, on CD.

Grange Schools

Another Discovery site is the Grange Schools complex, on the inner beach side of Adelaide, where Learning Technologies has been a strong focus for many years, with the school a member of the Technology Focus Schools program, and now identified as an Apple Distinguished School. Grange Schools is a large site for Reception to Year 7 students. All leadership positions have a Learning Technologies component.

The students use their ICT equipment in the classroom to learn about such artistic pursuits as music and drama. Every one of the 650 students at the Grange Primary School is taught music.

And they take their laptops into the field.

They go to the nearby Kircaldy Creek, a part of the River Torrens, which runs through Adelaide. There, they test the water quality for their Environmental Education, a major issue for schoolchildren today.

The children take their work very seriously, as the virtual custodians of the creek, which they test fortnightly for such readings as acids, nitrates, salinity, phosphates and turbidity. They make regular reports back to the local Council.

Parafield Gardens High School

Students at the Parafield Gardens High School in Adelaide regularly visit the aged care centre next door, where the school has installed computers and, together with adult volunteers work with older people on gaining access to the Internet.

Here we find John Hayes, and school student Peter Scott, making a journey together. Via the Internet, they are exploring the history of steam trains in South Australia.

It is a subject close to John's heart, for he used to be a guard on the South Australian country rail services.

Peter calls up reference material, and prints off various pages so John can put them in his scrapbook.

There is more to this encounter than social engagement, for Parafield Gardens High School has a specific policy of its students working in the community, earning formal accreditation towards their SACE, equivalent to university matriculation. The school is a State leader in Community Based Learning (CBL) as part of the Department's new Enterprise and Vocational Education program.

There is a deep tradition of community and a concern for equity in South Australia, especially involving the education of its children, which has the highest priority.

Chapter Five : Online Developments

South Australia is managing a major national online curriculum initiative to which all states, territories and the Commonwealth are contributing significant amounts of funding.

The project is establishing a framework for online development and delivery of content for selected curriculum areas and levels of schooling. New and innovative approaches to teaching and learning will be the focus, including virtual teaching activities in traditionally hands-on practical areas such as science and the arts. Through this initiative, teachers will have access to specific units of the highest quality content in Australia, and be able to tailor it to the needs of their own students.

Work is proceeding currently to determine agreed priority areas for development at the national and local level.

EdNA

Education Network Australia (EdNA) Online is a major and growing source of online curriculum and teacher training information, at the heart of which is a directory pointing to over 330,000 resources and services. It aggregates Australian and international quality online resources.

EdNA Online is believed to be one of the largest comprehensive national, public sector, online education, and quality resource services in the world.

EdNA as a national collaboration has used the federated structure of Australian government and the Internet to form an alliance that allows the education and training sector to learn and organise in relation to ICT as well as providing consolidated advice to government.

Managed by ***education.au limited,*** based in Adelaide, the service links the education community of approximately 3.5 million people across Australia, relating to over 10,000 educational institutions.

EdNA Online has a database of 10,400 core Internet sites -- linked to a further 320,000 quality resources -- that have been selected by educators as relevant and useful to Australian education and training. Supported by its extensive website gateway, it has considerable potential for influencing the knowledge society.

The EdNA collaborative networks have provided consolidated advice to the Australian Government on its Strategy for the Information Economy, copyright, telecommunications, bandwidth, professional development and online content as well as promoting the work done by the education and training sector in getting Australia online.

education.au limited has developed an online project as part of the netd@ys Europe 2000 initiative of the European Commission. Called *Journey to the Centre of Australia*, it involves host schools around the country creating curriculum content

about their local communities and interacting with virtual visitors as they journey towards the central Outback town of Alice Springs and Uluru, the great ancient "Rock", so central to Aboriginal mythology.

The journey will culminate in a celebration in Australia's 'Centre' on the launch of netd@ys Europe 2000 on 27 November.

South Australian TAFE Online

This education service, which is part of my Department , is one of the largest providers outside North America, beyond which it was appointed the first International WebCT Institute.

It has 250 online modules via the Internet, with students, both in Australia and overseas, studying online.

For example, its internationally recognised online induction package to help new ICT learners is used worldwide in over 120 leading education institutions by 120,000 students, and translated into two other languages apart from English.

It has established a world-class WebCT training and professional support program for educators and course authors, and has won a significant proportion of national funds for projects to enhance the national ICT skills. TAFE Online Education Service and MindMedia manage major national professional development programs in online education.

TAFE IN SA is a key partner with the North American developers of WebCT, a leading online education system that is used by over seven million students in 56 countries.

Online education programs developed in South Australia are now available to individuals and organizations anywhere, any time.

University of South Australia Online

The University of South Australia has developed its own universal online learning environment in-house. It employs a strategy that empowers all staff and students to have access regardless of the level of their IT skills within a deliberate, planned and whole of institution approach to preparing students for the e-world.

The university has been increasing its online resource base at the rate of 50 per cent every two months since March 1999.

By 2005, all students will do part of their course online, with over 10,000 international students expected to do the bulk of their course online in their own countries. The present off-shore figure is about 3000.

Chapter Six : The Future

Mawson Lakes

In terms of the future, Mawson Lakes, a brand new estate 12kms north of Adelaide, is the beacon for educational development in South Australia. Unlike other global sites, with Mawson Lakes, we are creating a creating a learning community by starting at the grass roots.

Mawson Lakes is an $850 million joint venture urban development between the South Australian Government and the Delfin Lend Lease Consortium, supported by Telstra, the University of South Australia and the City of Salisbury. It is on a 620 hectare site, incorporating a campus of the University of South Australia and the Technology Park business precinct. Ultimately, it will have 3700 dwellings, a 10,000 population, 5000 university students and employment for around 6000.

Its two most unique characteristics are that every home, workplace and institution is being connected with wide-band optic fibre cabling and educational services provided within the context of lifelong learning.

The vision for Mawson Lakes is to create a lifelong learning community with educational services which make optimal use of advanced information technologies and telecommunications (IT&T), and deliver these to institutions, businesses and the community, both on and off the site. Mawson Lakes is striving to be a community in which there will be learning for everyone, at any time, and in any place.

The Mawson Lakes School has been designed to offer a wide range of educational services to learners of all ages from the local community and beyond, which will include :

* An advisory, information and brokerage service for all learners ;

* Specialised educational products and services related to IT and the environment ;

* Customised services and individualised learning programs ; and

* Education services for all members of the community, starting with public primary.

The new educational paradigm for the technological age that Mawson Lakes represents proposes the re-thinking of six elements integral to schooling :

* The relationship between the community and the learning institution ;

* The ways curriculum and teaching and learning are conceived ;

* The notion of what constitutes an education service ;

* The organisation and structure of learning institutions, and the use of emerging technologies to enhance learning outcomes ;

* The place of research and evaluation in a learning institution ; and

* The ways staff improve their performance and add value to their workplace.

The Mawson Lakes School started with Primary students this year, and will be extended throughout the next 18 months to cater for learners of all ages.

The school is currently using 128K ISDN lines for Internet access, but is expanding to 2-10 megabit bandwidth -- a minimum of 20 times greater -- to allow video streaming in real time.

Important activities include Physical Education, dance, drama, music and environmental studies.

A project is being funded at Mawson Lakes to provide curriculum development and delivery of Phys. Ed., using IT.

Staff are taking their PE programs onto a website. From the website, the teachers use palm pilots to download a unit of work around a particular topic, make notes and assessments, film the students on digital video cameras, and put it back onto the web.

They take their technology into the field, where Phys. Ed. is popular as an important part of Australians' love of sport, heightened by the Olympics.

From the website, the students' parents will be able to call up the assessments and the pictures, and see how their children are going. There is nothing quite like seeing the look on a child's face when they accomplish something for the first time.

Chapter Seven : Conclusion

Mawson Lakes provides one of the most imaginative and intriguing faces of the future. Among its many qualities is its commitment through ICT to community and lifelong learning.

As such, it is our most recent example of South Australia's commitment to create a learning society, a learning State, and to equip its young people for the future as knowledge and ICT provide the skills to open up the world of learning

As for the future of both teachers and students in the ICT world, we can give them facilitation of critical thinking , independent learning, problem solving and the ability to analyse and be discerning and enterprising and good citizens.

In South Australia, we are very conscious of the need to be global learners. The skills and understanding that our students are gaining from ICT are positioning them acutely to meet the needs of the global economy for flexible, innovative learners in a rapidly changing environment.

And we also want our children to become worthy global citizens. This is underlined by South Australia having a long and deep tradition of social responsibility, as expressed in the equity of our education system now being so enhanced by ICT, across the great distances that make up our State.

One of my Government's priorities in advancing education and development in the State is that of *significantly increasing international students and business through targeted national and international marketing of Adelaide as an education city and through initiatives such as Education Adelaide.* (*Statement of Economic Directions*, December 1999).

Education Adelaide is vigorously promoting the place as "an artistic, safe, healthy, energetic, intelligent city of great beauty, where education is given the highest priority."

In keeping with South Australia being increasingly seen as a desirable place for interstate and overseas students to reside and gain an education, the State's on-line education and training services are now also reaching out to students beyond our borders.

There are so many ways that learning outcomes are changing, using Learning Technologies purposefully. They include :

* Students have a different approach to thinking. They have the confidence to explore, experiment and generate lots of ideas in shorter times ;

* Students are more discerning users of information. This enforces a moral obligation to teach critical literacy -- now;

* Students have visual literacy;

* Students show greater creativity with presentations and communication; and

* Students are tighter thinkers and problem solvers.

All of this suggests the future will be a fascinating and, we trust, more confident place. It rests on ensuring tomorrow's global citizens are passionate learners who can solve the problems of the planet.

It is also important for us to continue accompanying our children closely on the never-ending journey of learning with technology. *Classrooms without walls* do not mean absentee landlords.

No longer the bastion of knowledge within four walls as the shape of education shifts from teaching to learning, we also need to keep changing, keeping up with the challenge of technology as it accelerates its momentum, importance and impact.

As educators, we need to enshrine the values of wisdom, fairness and democracy as brought to bear on knowledge in the name of education serving society.

We need to stay there with our young people, offering supportive facilitation of their minds and spirits so knowledge and service can evolve together in an exalted way.